

BIOLOGY 342 - FALL 2010

EFFECT OF HOUSING CONDITIONS ON REA

Does a male guppy display to females more readily if he has
We are attempting to determine whether environment has an effect
of different conditions for a period of three weeks.

We suspect that male fish kept with other males will display more quickly

Poecilia reticulata is native to most of the Americas and has
been introduced to almost every continent in the world.
A livebearer with strong sexual dimorphism and a gestation

We tested three treatments:
A single male, 4 males together, and a male with
first and last treatments were run twice for a total

READINESS TO DISPLAY IN THE COMMON GUPPY

BY JACK CRAIG & MATT YEE

been raised alone? With others of his sex? With females?
an effect on courtship behavior by housing fish in a number
weeks, then testing their readiness to display.

ly and more frequently than either those housed alone or with females.

Once the acclimation period was complete, each male fish was introduced to a new female in a clean test tank. The fish were acclimated in the test tank on either side of an opaque barrier for five minutes, then allowed to interact for another five. We recorded the number of displays as well as the number of seconds before the first.

Tests were performed blind and in random order to prevent observer bias

h 3 females. The
al of 5 tanks Each

period of about one month, they are used for malaria control due to their tremendous appetite for mosquito larvae, and hardy disposition which makes them ideal for lab work.



Info and Picture from: Wikipedia

was given 1 cm² tetramin flakes, daily ambient light and water changes, and a room temperature



Above: A visual representation of our treatments, control groups at right. Fish were allowed to acclimate to these conditions prior to testing. All dead fish were accounted for, and any fish from poor genetic stock were removed.

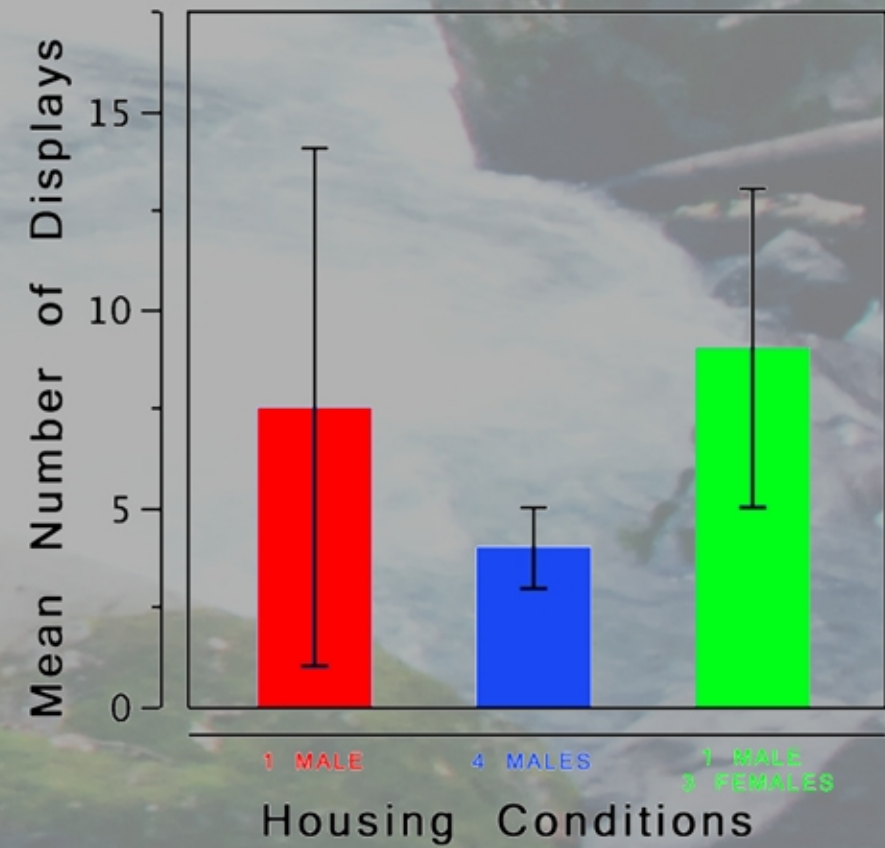
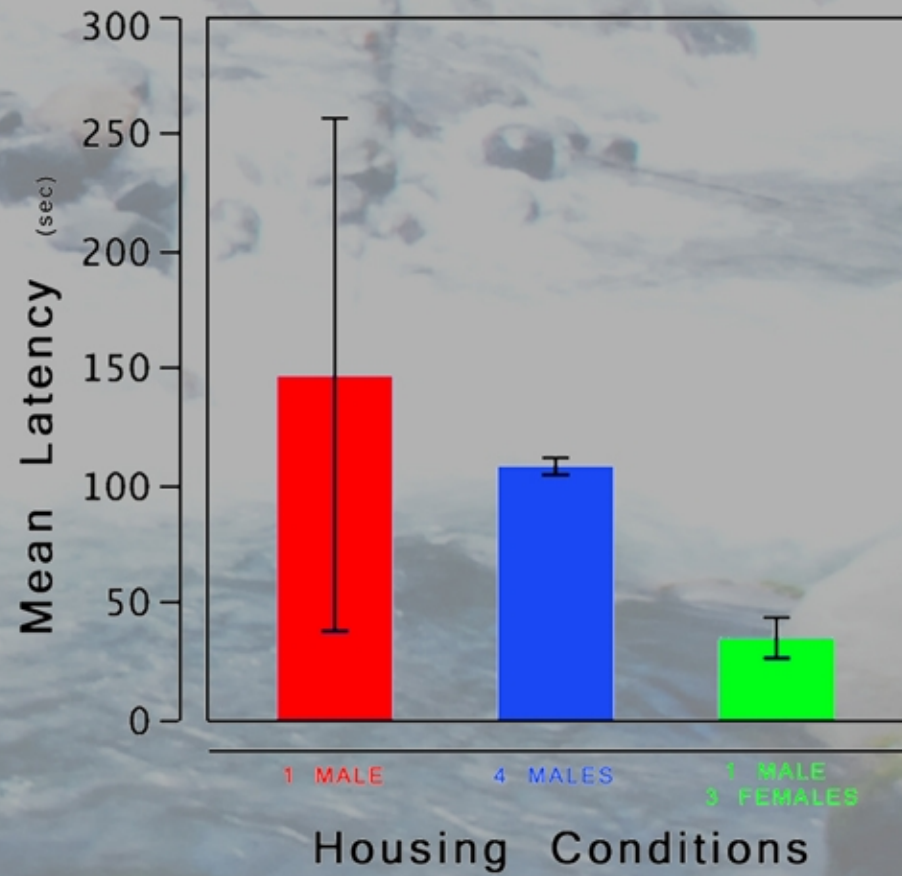
This experiment has proven that housing does, in fact, have an effect on readiness to display, but not on the behavior itself. Males acclimated to the presence of females were more ready to interact with them, and those that had never been housed with females were less ready to interact. This means that, rather than being regulated entirely genetically, courtship behavior has an environmental component.

ent, regular aeration
of 72 degrees.



lor coded to match the
e conditions for 3 weeks
any crippled fish resultant
oved.

tests were performed blind and in random order to prevent observer bias.



As shown above, we observed that males raised with females were more ready to display and displayed more frequently when compared to those raised among other males. Males raised on their own produced no significant results due to variance between individuals tested.

t the effect we predicted.
had never seen a female took longer.
mental, and possibly even social component.

We'd like to thank:

The bio department and stockroom for their excellent facilities, our generous TAs, and, of course, Suzy Renn.